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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,917	01/20/2005	Thomas Bechtold	05579-00338-US	6177
23416	7590	11/15/2006	EXAMINER	
CONNOLLY BOVE LODGE & HUTZ, LLP			KHAN, AMINA S	
P O BOX 2207			ART UNIT	
WILMINGTON, DE 19899			PAPER NUMBER	

1751

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/521,917

Applicant(s)

BECHTOLD ET AL.

Examiner

Amina Khan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/20/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/20/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4,6 and 8-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Bechtold et al. (WO 01/65000). Since WO 01/6500 is not in English, the US equivalent document, US 6,814,763, was used for citation purposes.

Bechtold et al. teach methods of dyeing cellulosic textiles with sulfur dyes wherein the dye is added to a dyebath in prereduced form and the portion of the dye that is reoxidized by air contact during the dyeing is reoxidized electrochemically (column 4, lines 25-65). Bechtold et al. further teach using electrolytic cells which are customary, specifically those with a cation exchange membrane (column 5, lines 10-45). Bechtold et al. further teach that sodium hydroxide is used as the anolyte (column 5, example 1). Bechtold et al. further teach that the electrolytic cell is coupled to a dyebath (column 1, lines 30-35). Bechtold et al. further teach that the cell potential controls the dyebath potential (column 5, lines 65-67; column 6, lines 1-2) and the dyeing was performed at 80°C (column 6, lines 1-13).

Accordingly, Bechtold et al. anticipate the material limitations of the instant claims.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5,7 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bechtold et al. (WO 01/65000) as applied to the claims above, and further in view of Marte et al. (WO 00/31334). Since WO 01/6500 and WO 00/31334 are not in English, the US equivalent documents, US 6,814,763 and US 6,627,063, were used for citation purposes, respectively.

Bechtold et al. are relied upon as set forth above. Bechtold et al. teach dyeing machines differ in the degree of air access they allow but any known dyeing process may be utilized (column 4, lines 66-67; column 5, lines 1-7). Bechtold et al. further teach the equivalence of dyeing with sulfur dyes and indigo dyes (column 4, lines 29-42).

Bechtold et al. does not teach dyeing in an inert atmosphere and is silent as to the concentration of the sulfur dyes.

Marte et al. teach dyeing with sulfur and vat dyes (column 2, lines 10-15; claim 1) in oxygen free electrolysis vessels (column 3, lines 25-27; column 5, lines 50-55) wherein the technique is suitable for initial dye stocks as well as dye baths (column 6,

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lines 5-10). Marte et al. further teach indigo dye concentrations from 5g/L to 25g/L (column 9, lines 5-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods of Bechtold et al. by incorporating the oxygen free reaction vessels and dye concentrations taught by Marte et al. because Marte et al. teaches inert conditions and these concentration of dyes as effective in producing low cost, less pollution, dyeing methods with higher dye solubilities. While Marte et al. teach dye concentrations for indigo dyes, the reference as a whole is directed towards vat and sulfur dyes, so it would be obvious to substitute sulfur dyes into the methods at concentrations similar to those of indigo. Furthermore, Bechtold et al. teach the equivalence of dyeing with sulfur or indigo dyes. One of ordinary skill in the art would have been motivated to combine the teachings of the references absent unexpected results.

5. Claims 1,2 and 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marte et al. (WO 00/31334). Since WO 00/31334 is not in English, the US equivalent document, US 6,627,063, was used for citation purposes.

Marte et al. teach dyeing with sulfur and vat dyes (column 2, lines 10-15; claim 1) in oxygen free electrolysis vessels (column 3, lines 25-27; column 5, lines 50-55) wherein the technique is suitable for initial dye stocks as well as dye baths (column 6, lines 5-10). Marte et al. further teach dyeing cotton fabric with indigo dye concentrations from 5g/L and caustic soda at 40°C while excluding oxygen (column 7, lines 20-45).

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Marte et al. do not teach all the instantly claimed embodiments in a single example.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods of Marte et al. by using sulfur dyes at the indigo dye concentrations because Marte et al. teaches the equivalence of sulfur and vat dyes as effective in producing low cost, less pollution, dyeing methods with higher dye solubilities. One of ordinary skill in the art would have been motivated to modify the teachings of the reference absent unexpected results.

6. Claims 3 and 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marte et al. (WO 00/31334) as applied to the claims above, further in view of Bechtold et al. (WO 99/11716). Since WO 00/31334 and WO 99/11716 are not in English, the US equivalent documents, US 6,627,063 and US 6,312,583, were used for citation purposes, respectively.

Marte et al. were relied upon as set forth above.

Marte et al. do not teach membrane electrolytic cells.

Bechtold et al. teach reducing sulfur dyes in multi cathode cells divided by a cation exchange membrane for the purpose of producing reduced sulfur dyes with the benefit of not requiring chemical reduction agents during dyeing (column 2, lines 50-56; column 3, lines 10-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods taught by Marte et al. by incorporating the

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membrane electrolytic cells taught by Bechtold et al. because Bechtold et al. teach the cells as effective in dyeing with reduced sulfur dyes. One of ordinary skill in the art would have been motivated to combine the teachings of the references absent unexpected results.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amina Khan whose telephone number is (571) 272-5573. The examiner can normally be reached on Monday through Friday, 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Amina Khan

Amina Khan, PhD
Patent Examiner
November 8, 2006

Lorna M. Douyon

**LORNA M. DOUYON
PRIMARY EXAMINER**